

ORDER NO. MD0502022C2

Service Manual

Active Subwoofer System

SB-WA880EB

Colour

(S)... Silver Type



SB-WA880

SPECIFICATIONS

Specification

■ Active subwoofer

Type	1 way, 2 speaker system, Bass reflex
Speaker unit(s)	
1. Woofer	15 cm Cone type, 4 Ω
2. Woofer	15 cm Cone type, 4 Ω
Output sound pressure	84 dB/W (1.0 m)
Frequency range	34 Hz-220 Hz (-16 dB) 38 Hz-190 Hz (-10 dB)
Dimensions (W x H x D)	202 x 410 x 500 mm
Mass	13.7 kg

■ General

Power consumption	390 W
Power supply	AC 230-240V, 50Hz

Note :

Specifications are subject to change without notice.

Mass and dimensions are approximate.

■ System : SC-HT880(EB) Music Center: SA-HT880(EB)

Satellite Speakers: SB-HT880(EB)

Active Subwoofer: SB-WA880(EB)

■ System : SC-HT880W(EB)

Music Center: SA-HT880W(EB)

Satellite Speakers: SB-HT880(EB)

Digital Tx & Rx: SH-HT880W(EB)

Active Subwoofer: SB-WA880(EB)

SB-HT880EB-S

Front Speaker	SB-FS930P
Center Speaker	SB-PC930P
Surround Speaker	SB-FS880EB

SH-HT880WEB-S

Digital Transmitter (Tx)	SH-FX50TEB
Digital Receiver (Rx)	SE-FX50EB

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

1. Safety Precautions

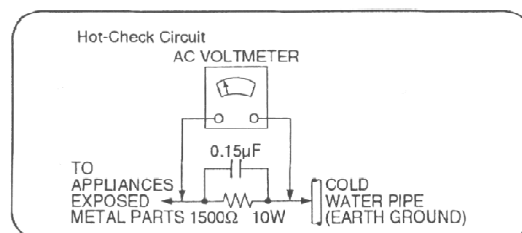
1.1. GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, ensure that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, check for leakage current to prevent from being exposed to shock hazards.

1.1.1. LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Using an ohmmeter measure the resistance value, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between $1\text{M } \Omega$ and $5.2\text{ } \Omega$. / When the exposed metal does not have a return path to the chassis, the reading must be ∞ .

Fig. 1



1.1.2. LEAKAGE CURRENT HOT CHECK (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a $1.5\text{k } \Omega$, 10 watts resistor, in parallel with a $0.15\text{ } \mu\text{F}$ capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to

- measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
 5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
 6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. Should the measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

2. Caution for AC Mains Lead

(For “EB” area code model only.)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local dealer.

CAUTION!

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OFF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted, please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral

Brown: Live

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL  OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use

Remove the connector cover.

How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.

Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

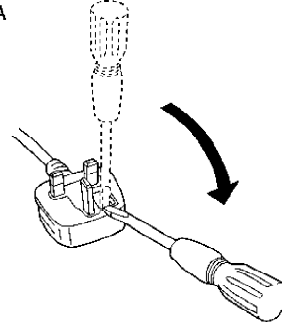
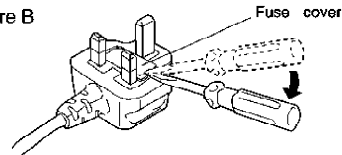


Figure B



2. Replace the fuse and close or attach the fuse cover.

Figure A

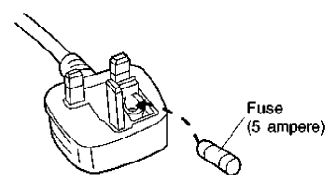
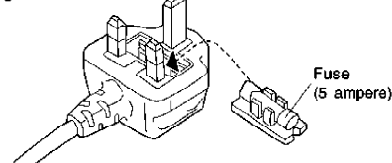


Figure B



3. Handling the Lead-free Solder

3.1. About lead free solder (PbF)

Distinction of PbF P.C.B. :

P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.

Caution:

- Pb free solder has a higher melting point than standard solder.

Typically the melting point is 50 - 70°F (30 - 40°C) higher. / Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ±

10°C).

- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).
- When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

4. Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitors C546~C549 through a 10 Ω , 1 W resistor to ground.

DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.

After repairs are completed, restore power gradually using a variac, to avoid overcurrent. Current consumption at AC220 V, 60 Hz in NO SIGNAL mode should be ~620 mA.

5. Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.
- Stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are “shorted”, or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

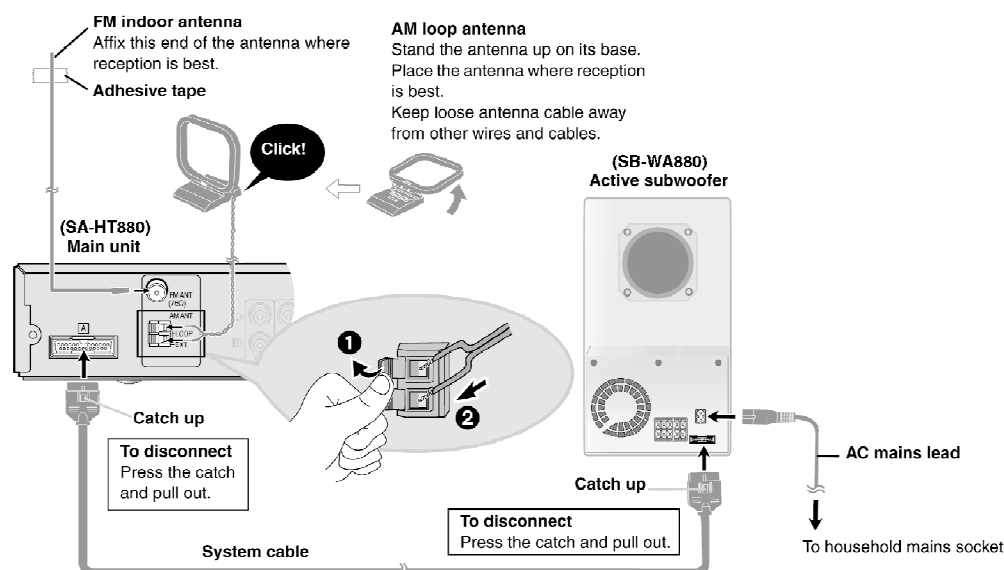
Note:

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

6. Connection of the Speaker Cables

- Be sure to connect speaker cables before connecting the AC power supply cord.
 - The load impedance of any speaker used with this unit must be 4 Ω .
 - Be sure to connect the cable from the right speaker to the right terminal and the cable from the left speaker to the left terminal.
1. Strip off the outer covering, and twist the center conductor. Make sure the bare ends of the wires are not unravelled. (If they are, twist them tight again.)
 2. Insert the wire to the rear panel of the unit and close the lever.

- Connect the AC mains lead after all other connections are complete.
- Optional antenna connections.



7. Disassembly Procedure

“ATTENTION SERVICER”

Some chassis components may have sharp edges.
Be careful when disassembling and servicing.

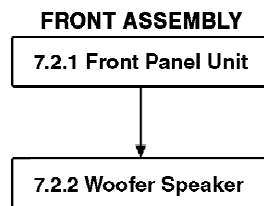
1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures.
Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.

7.1. Disassembly flow chart

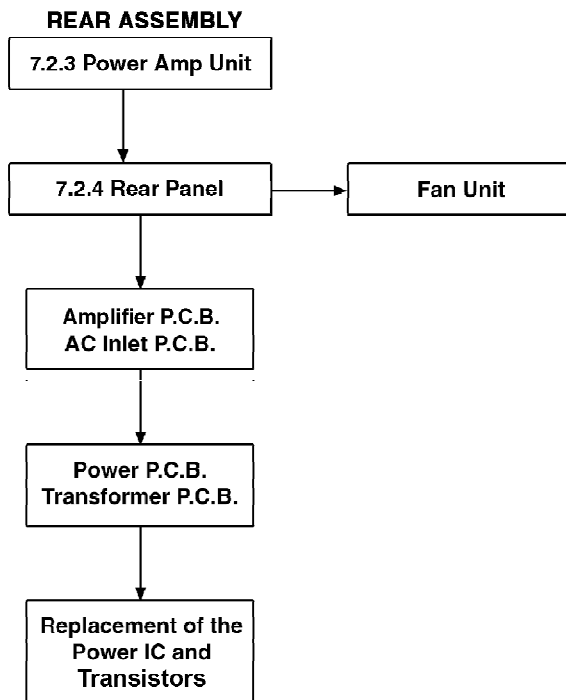
The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.

To assemble the unit, reverse the steps shown in the chart below.

7.1.1. Disassembly of Front Panel Assembly

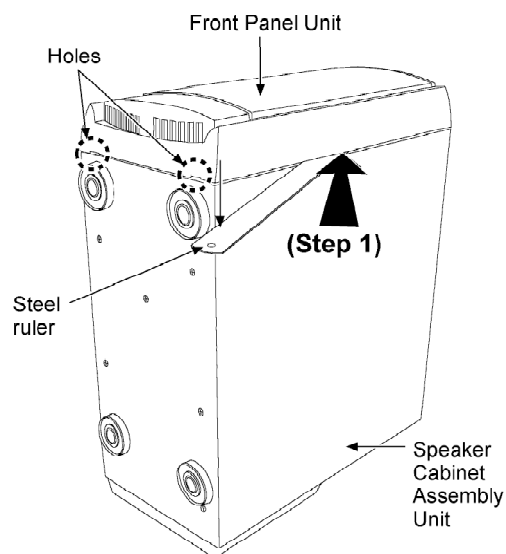


7.1.2. Disassembly of Rear Assembly

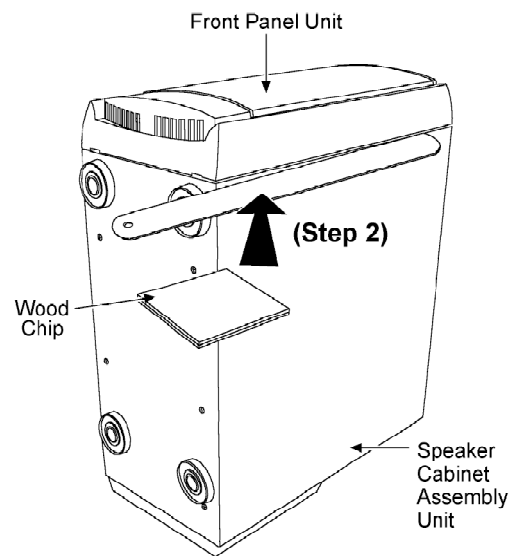


7.2. Disassembly of the Speaker Unit and Checking of the P.C.B.

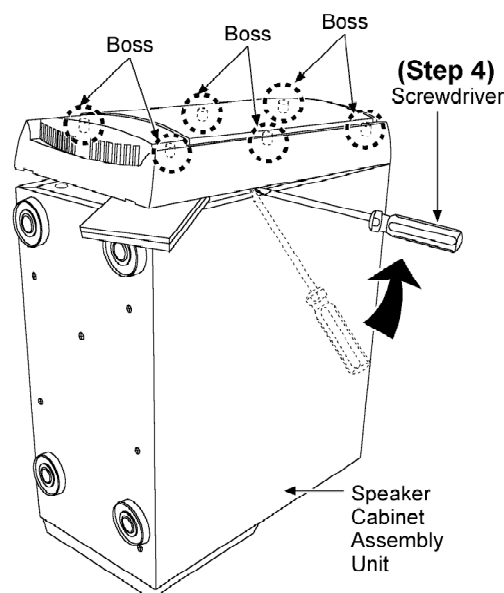
7.2.1. Disassembly of the Front Panel Unit



Step 1: Slot in a steel ruler to give a gap between the Front Panel Unit and the Subwoofer Cabinet Assembly as arrow shown.



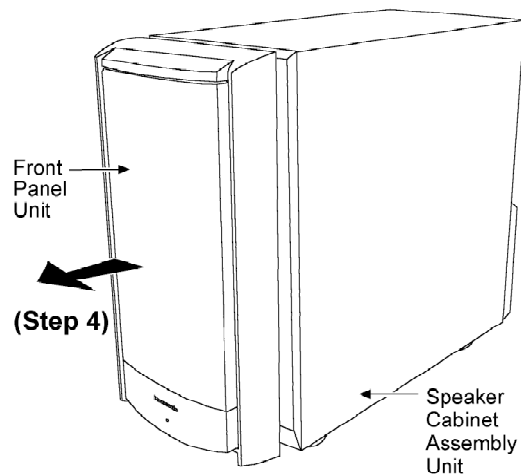
Steps 2: Slot a piece of wood chip in between the Front Panel Unit and the steel ruler as arrow shown.



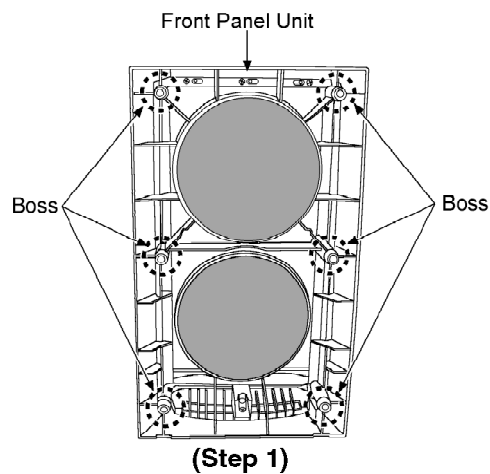
Step 3: Use the screwdriver to slightly lift up the Front Panel Unit as arrow shown.

Note:

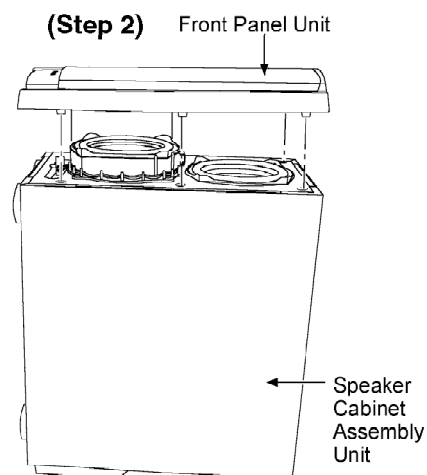
Be careful with the bosses which are glued to the Subwoofer Cabinet Assembly.



Step 4: Remove the Front Panel Unit from the Speaker Cabinet Assembly Unit as arrow shown.
- Assembly of the Front Panel Unit.



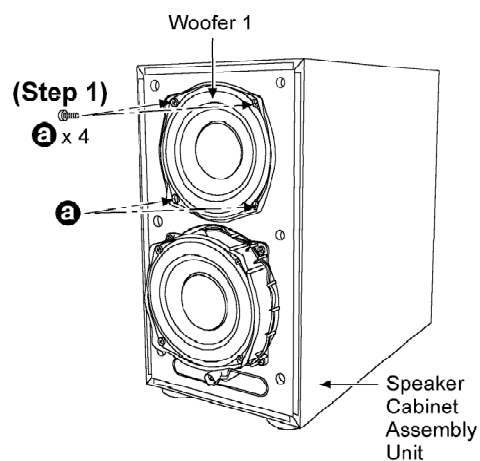
Step 1: Clean up the remaining glue at the 6 bosses points and replace with the normal glue.



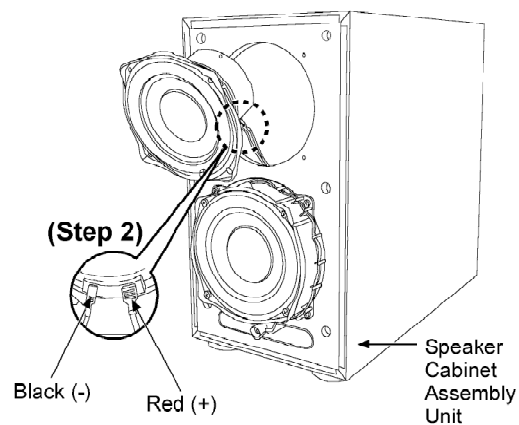
Step 2: Replace the Front Panel Unit firmly back to the cabinet.

7.2.2. Disassembly of the Woofer Speaker 1

Follow Step (1) to Step (4) described in section 7.2.1.



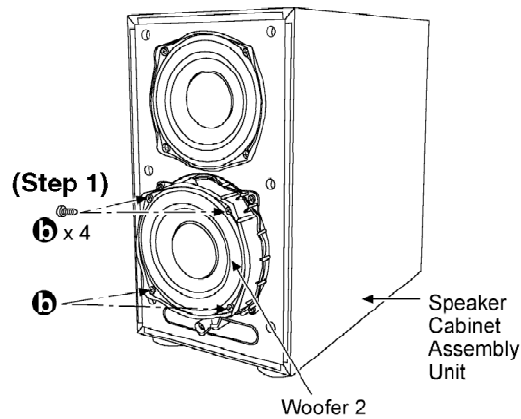
Step 1: Remove 4 screws.



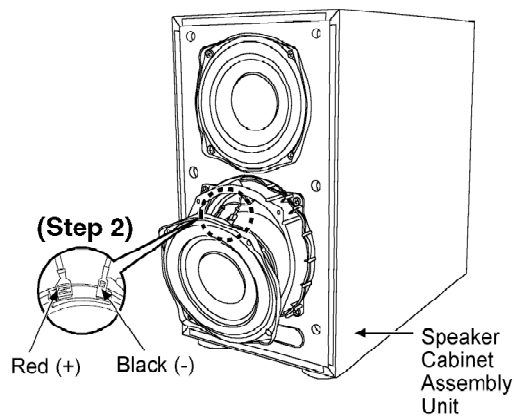
Step 2: Remove the Woofer 1 by detaching the (+) red and (-) black wires.

7.2.3. Disassembly of the Woofer Speaker 2

Follow Step (1) to Step (4) described in section 7.2.1.

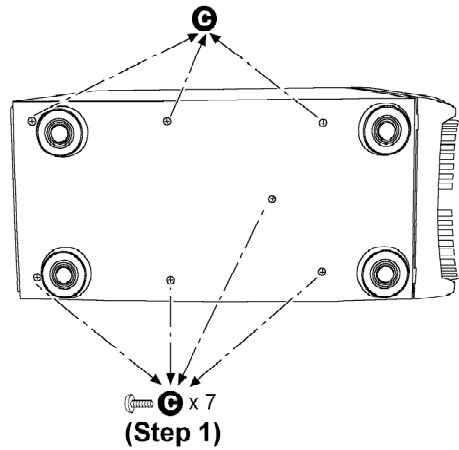


Step 1: Remove 4 screws.

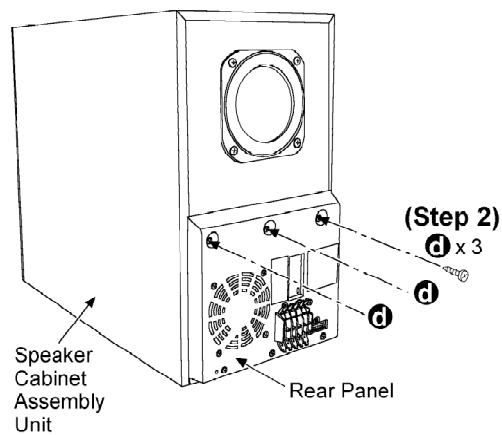


Step 2: Remove the Woofer 2 by detaching the (+) red and (-) black wires.

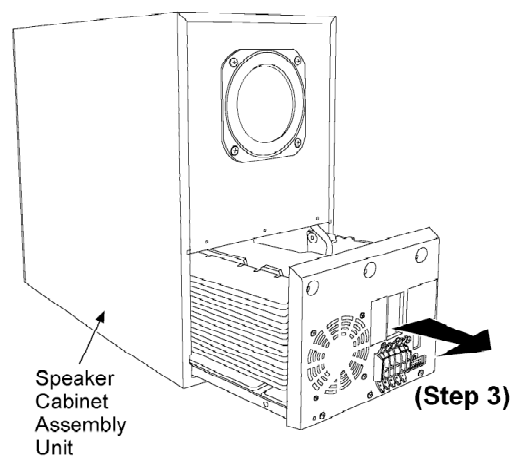
7.2.4. Disassembly of the Power Amp Unit



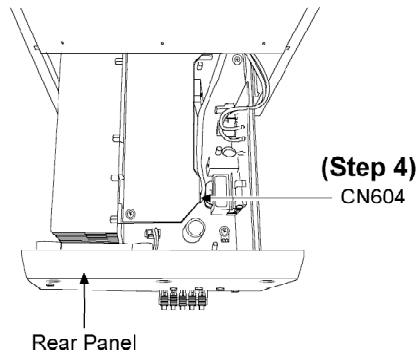
Step 1: Lay the speaker unit as shown. Remove 7 screws from the bottom of the woofer unit.



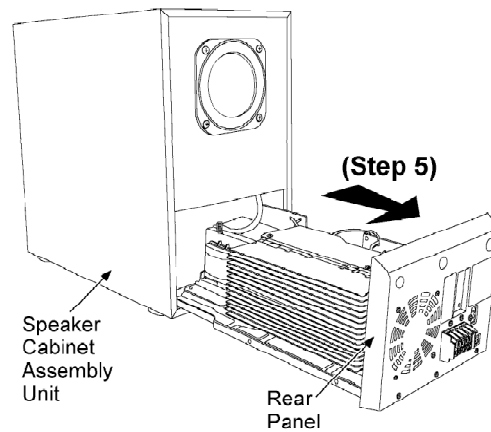
Step 2: Remove 3 screws from the rear panel.



Step 3: Pull out the Power Amp Unit slightly as arrow shown.



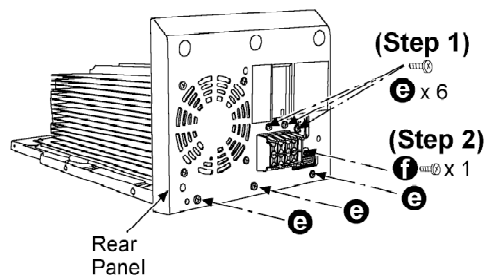
Step 4: Disconnect connector (CN604).



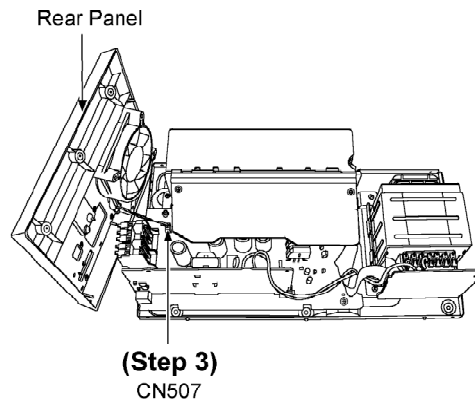
Step 5: Pull out the entire Power Amp Unit.

7.2.5. Disassembly of the Rear Panel and Fan Unit

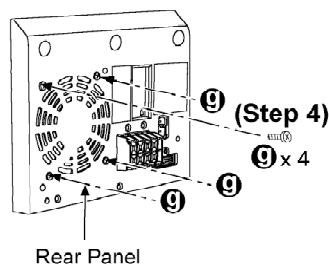
Follow Step (1) to Step (5) described in section 7.2.4.



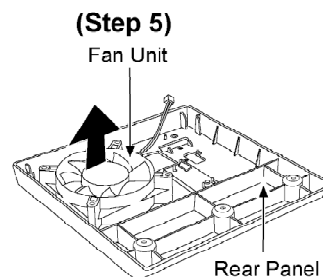
Step 1 & 2: Remove 6 screws from the rear panel.



Step 3: Disconnect the connector (CN507) to detach the rear panel.



Step 4: Remove 4 screws from the rear panel.

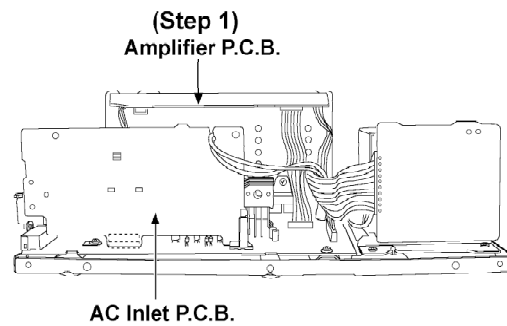


Step 5: Lay the rear panel and remove the Fan Unit as arrow shown.

7.2.6. Disassembly and checking of the AC Inlet P.C.B. and Amplifier P.C.B.

Follow Step (1) to Step (5) described in section 7.2.4.

Follow Step (1) to Step (3) described in section 7.2.5.

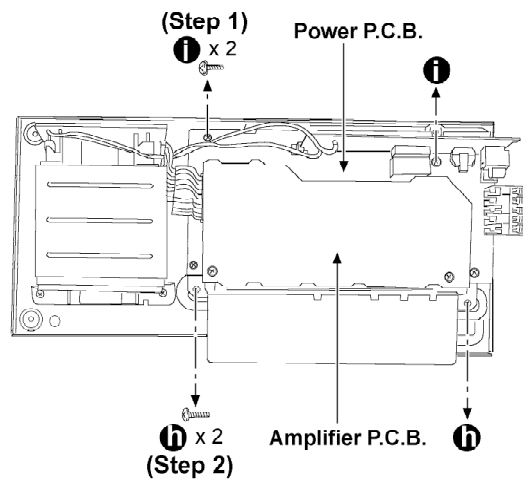


Step 1: Check both the Amplifier P.C.B. and AC Inlet P.C.B..

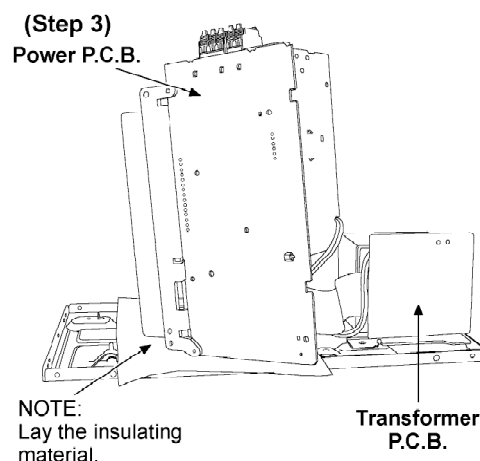
7.2.7. Disassembly and checking of the Power P.C.B. and Transformer P.C.B.

Follow Step (1) to Step (5) described in section 7.2.4.

Follow Step (1) to Step (3) described in section 7.2.5.



Step 1 & 2: Remove the 4 screws.

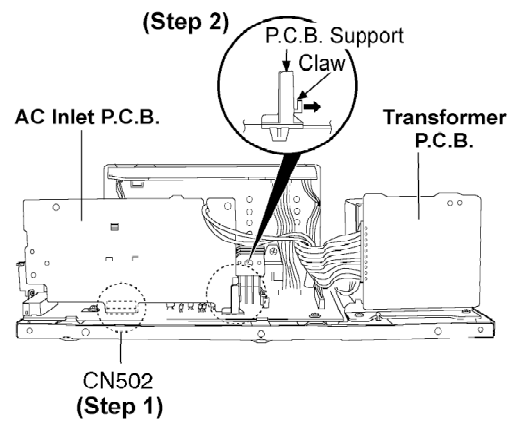


Step 3: Flip the Power P.C.B. as shown for checking both Power P.C.B. and Transformer P.C.B.

7.2.8. Replacement of Power ICs and Transistor

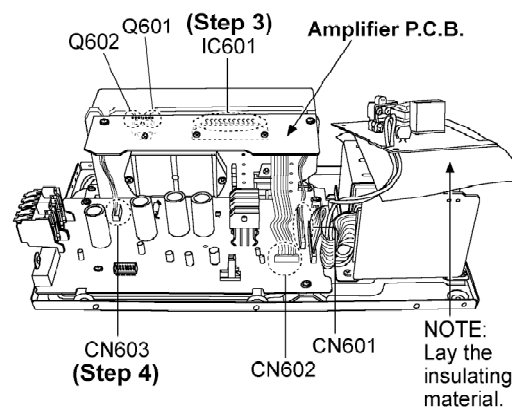
Follow Step (1) to Step (5) described in section 7.2.4.

Follow Step (1) to Step (3) described in section 7.2.5.



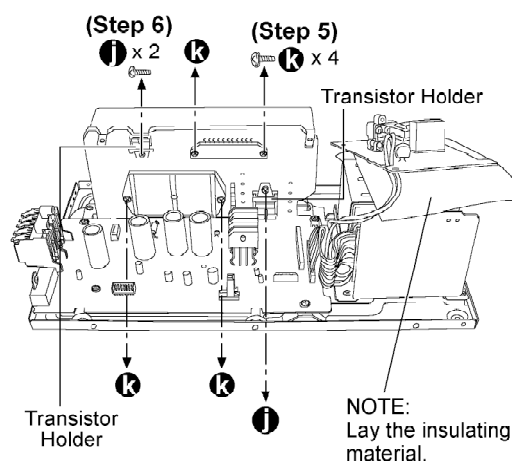
Step 1: Disconnect the connector (CN502).

Step 2: Remove the AC Inlet P.C.B. by pulling the P.C.B. support claw arrow shown).



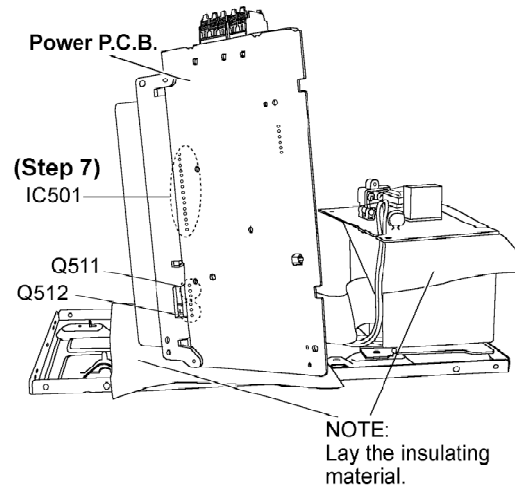
Step 3: Desolder the terminals of IC601, Transistors Q601 and Q602.

Step 4: Disconnect the connectors CN601, CN602 and CN603 and remove the Amplifier P.C.B..



Step 5: Remove 4 screws.

Step 6: Remove 2 screws and the transistor holders.



Step 7: Flip the Power P.C.B. as shown to desolder the terminals of the Power IC501, Transistors Q511 and Q512.

8. Voltage Measurement and Waveform Chart

Note:

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard.
Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point because it may differ from actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

8.1. Voltage Measurement

8.2. Waveform

9. Block Diagram

10. Notes of Schematic Diagram

(All schematic diagrams may be modified at any time with the development of the new technology)

Note:

- The voltage value and waveforms are the reference voltage of this

unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

- Importance safety notice :

Components identified by  mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution !

IC, LSI and VLSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminium foil.
- Put a conductive mat on the work table.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.

11. Schematic Diagram

11.1. Power Circuit

11.2. Transformer Circuit and AC Inlet Circuit

11.3. Amplifier Circuit

12. Printed Circuit Board

12.1. Power P.C.B.

12.2. AC Inlet P.C.B. and Transformer P.C.B.

12.3. Amplifier P.C.B.

13. Wiring Connection Diagram

14. Illustration of ICs, Transistors and Diodes

15. Parts Location and Replacement Parts List

Notes:

- Important safety notice:

Components identified by  mark have special characteristics

important for safety.

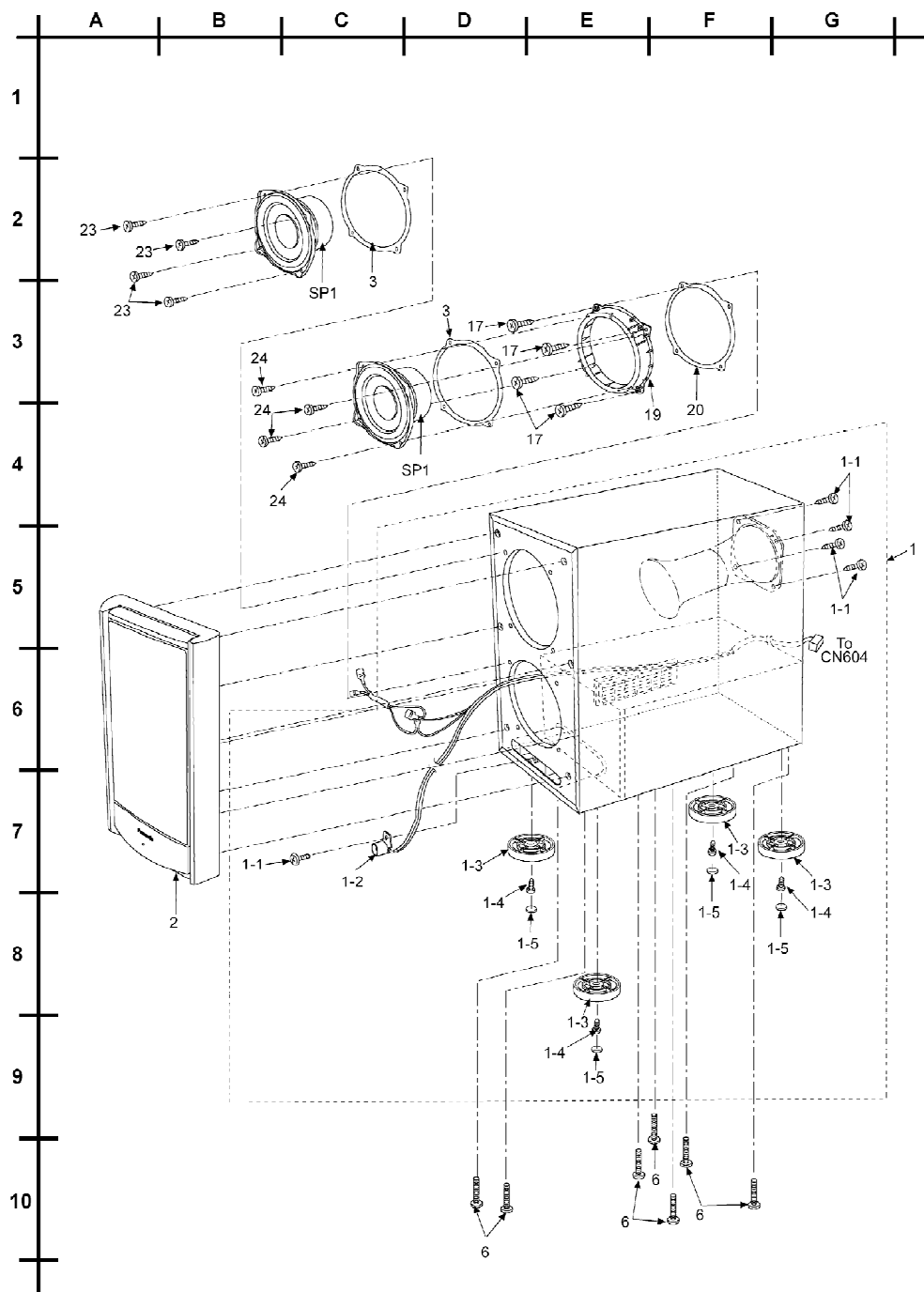
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.

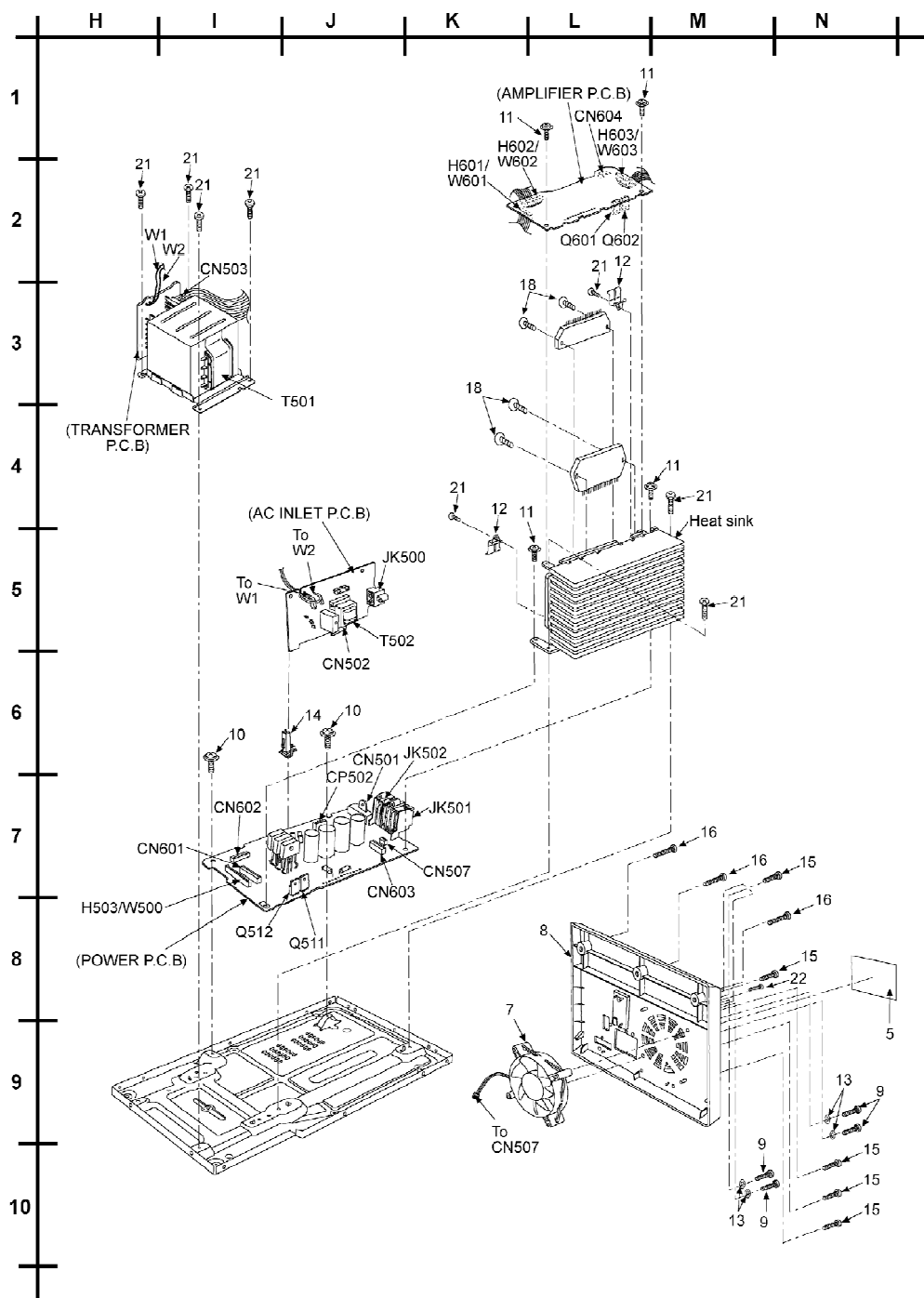
When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.

- The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour)
Parts without these indications can be used for all areas.
- Capacitor values are in microfarads (μ F) unless specified otherwise, P= Pico-farads (pF), F= Farads.
- Resistance values are in ohms, unless specified otherwise, 1K= 1,000 (OHM).
- The marking (RTL) indicates that the Retention Time is limited for this items. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of a availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
- [M] Indicates in the Remarks columns indicates parts supplied by PAVCSG.

15.1. Cabinet

15.1.1. Cabinet Parts Location





15.1.2. Cabinet Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
<u>1</u>	RFKHBWA880EB	SUB WOOFER CAB ASS'Y	[M]
<u>1-1</u>	XTB4+12AFJ	WOOD SCREW (TBZP)	[M]
<u>1-2</u>	B3AAA0000583	LED (RED)	[M]
<u>1-3</u>	RGKX0284-J	LEG	[M]
<u>1-4</u>	XTB3+12GFJ	SCREW	[M]
<u>1-5</u>	RKAX0019-KK	LEG CUSHION	[M]
<u>2</u>	RYQX0180-S	FRONT PANEL UNIT	[M]
<u>3</u>	RMQX0110	EVA PACKING (WOOFER)	[M]
<u>5</u>	RGNX0291A-S	SPEC LABEL	[M]
<u>6</u>	XTS4+20JFJ	SCREW	[M]
<u>7</u>	REM0072-4	FAN	[M]
<u>8</u>	RGRX0049A-H	REAR PANEL	[M]
<u>9</u>	RHD30065-1S	SCREW (TBZP)	[M]
<u>10</u>	RHD30090-1	SCREW	[M]
<u>11</u>	RHD30092-1	SCREW	[M]
<u>12</u>	RMC0158-S2	TR-FIXTURE	[M]
<u>13</u>	RMG0606-K	FAN INSULATOR	[M]
<u>14</u>	RMN0203	PCB HOLDER	[M]
<u>15</u>	XTB3+10JFJ	SCREW	[M]
<u>16</u>	XTB3+16AFJ	SCREW (TBZP)	[M]
<u>17</u>	XTB4+10GFJ	SCREW (TBZP)	[M]
<u>18</u>	XTW3+15TFJ	SCREW (TBZP)	[M]
<u>19</u>	RGPX0175	WOOFER SPACER	[M]
<u>20</u>	RMQX0111	EVA PACKING (W. SPK)	[M]
<u>21</u>	RHD30119	SCREW	[M]
<u>22</u>	XTN26+10JFJ	SCREW	[M]
<u>23</u>	XTB4+16AFJ	SCREW	[M]
<u>24</u>	XTB3+10GFJ	SCREW (SPEAKER UNIT)	[M]

15.2. Electrical Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PRINTED CIRCUIT BOARD	
	REPX0471D	POWER P.C.B./ AC INLET P.C.B./ TRANSFORMER P.C.B.	[M] RTL
	REPX0472B	AMPLIFIER P.C.B.	[M] RTL
		INTEGRATED CIRCUITS	
IC501	RSN311W64D-P	IC HIC (PBF)	[M]
IC601	RSN312H24A-P	IC HIC	[M]
		TRANSISTORS	
Q501	B1AACF000117	TRANSISTOR	[M]
Q502	B1AACF000117	TRANSISTOR	[M]
Q503	B1AACF000117	TRANSISTOR	[M]
Q505	B1AACF000117	TRANSISTOR	[M]
Q506	B1GCCFJJ0016	TRANSISTOR	[M]
Q511	B1BACG000048	TRANSISTOR	[M]
Q512	B1BCCG000023	TRANSISTOR	[M]
Q515	B1AACF000117	TRANSISTOR	[M]
Q516	B1GACFJJ0018	TRANSISTOR	[M]
Q517	B1BACG000048	TRANSISTOR	[M]
Q519	B1AACF000117	TRANSISTOR	[M]
Q520	B1GCCFJJ0016	TRANSISTOR	[M]
Q552	B1ACCF000094	TRANSISTOR	[M]
Q553	2SD0592ARA	TRANSISTOR	[M]
Q554	B1ACCF000094	TRANSISTOR	[M]
Q555	2SD0592ARA	TRANSISTOR	[M]
Q556	B1ACCF000094	TRANSISTOR	[M]
Q557	2SD0592ARA	TRANSISTOR	[M]
Q559	B1AACF000117	TRANSISTOR	[M]
Q601	B1BACG000048	TRANSISTOR	[M]
Q602	B1BCCG000023	TRANSISTOR	[M]
Q603	B1BAAJ000003	TRANSISTOR	[M]
		DIODES	
D500	B0AACK000004	DIODE	[M]
D501	B0JAPG000019	DIODE	[M]
D502	B0JAPG000019	DIODE	[M]
D503	MA2C700A0F	DIODE	[M]
D504	B0AACK000004	DIODE	[M]
D508	B0AACK000004	DIODE	[M]
D509	B0BA5R100013	DIODE	[M]
D510	B0BA5R700008	DIODE	[M]
D525	B0BA6R600008	DIODE	[M]
D527	B0EAKM000122	DIODE	[M]
D528	B0EAKM000122	DIODE	[M]
D529	B0EAKM000122	DIODE	[M]
D530	B0EAKM000122	DIODE	[M]
D555	B0AACK000004	DIODE	[M]
D556	B0BA01100004	DIODE	[M]
D557	B0EAKM000117	DIODE	[M]
D558	B0AACK000004	DIODE	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
D559	B0AACK000004	DIODE	[M]
D560	B0AACK000004	DIODE	[M]
D561	B0BA01100004	DIODE	[M]
D562	B0AACK000004	DIODE	[M]
D563	B0BA01900005	DIODE	[M]
D564	B0BA01900005	DIODE	[M]
D565	B0BA01900005	DIODE	[M]
D566	B0BA01900005	DIODE	[M]
D597	B0FBAM000009	DIODE	[M]
D598	B0FBAM000009	DIODE	[M]
D599	B0FBAM000009	DIODE	[M]
D601	B0FBAM000009	DIODE	[M]
D602	B0FBAM000009	DIODE	[M]
D603	B0JAPG000019	DIODE	[M]
D604	B0JAPG000019	DIODE	[M]
D605	B0BA01200008	DIODE	[M]
D606	B0BA01200008	DIODE	[M]
D607	B0BA02300017	DIODE	[M]
D608	B0BA01400009	DIODE	[M]
D609	B0BA01900005	DIODE	[M]
D610	B0BA01400009	DIODE	[M]
D611	B0BA01900005	DIODE	[M]
		CONNECTORS	
CN501	K1FB125B0095	SYSTEM CONNECTOR	[M]
CN502	K1KB07B00020	7P CONNECTOR	[M]
CN503	K1KA15B00016	15P CONNECTOR	[M]
CN507	K1KA02A00008	2P CONNECTOR	[M]
CN601	K1KA10A00432	10P CONNECTOR	[M]
CN602	K1KA08A00464	8P CONNECTOR	[M]
CN603	K1KA08A00464	8P CONNECTOR	[M]
CN604	K1KA04B00058	4P CONNECTOR	[M]
CP502	K1KA07A00123	7P CONNECTOR	[M]
		COILS & TRANSFORMERS	
L500	ELF15N035AN	LINE FILTER	[M] 
L501	G0AR76Y00001	CHOKE COIL	[M]
L502	G0AR76Y00001	CHOKE COIL	[M]
L505	G0AR76Y00001	CHOKE COIL	[M]
L601	G0AR76Y00001	CHOKE COIL	[M]
L602	G0AR76Y00001	CHOKE COIL	[M]
T501	G4C8AHK00004	TRANSFORMER	[M] 
T502	G4C2AAJ00005	BACK-UP TRANSFORMER	[M] 
		COMPONENT COMBINATION	
Z501	ERZV10V511CS	ZENER	[M] 
		SPEAKER	

		SECRET	
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Ref. No.	Part No.	Part Name & Description	Remarks
SP1	EAS15PL05A	SPEAKER UNIT	[M]
		RELAY	
RLY501	K6B1AEA00003	RELAY	[M] 
		FUSE	
F1	K5D502BK0006	5A CURRENT FUSE	[M] 
		FUSE HOLDERS	
FC501	EYF52BCY	FUSE HOLDER	[M]
FC502	EYF52BCY	FUSE HOLDER	[M]
		FUSE PROTECTOR	
FP1	K5G502AA0002	5A FUSE PROTECTOR	[M] 
		HOLDERS	
H503	K1YF15000004	15P WIRE HOLDER	[M]
H601	K1YF10000006	10P WIRE HOLDER	[M]
H602	K1YF08000003	WIRE HOLDER	[M]
H603	K1YF08000003	WIRE HOLDER	[M]
		JACKS	
JK500	K2AA2B000009	JK AC OUTLET	[M] 
JK501	K4BC06B00055	JK SPEAKER TERMINAL	[M]
JK502	K4BC04B00107	JK SPEAKER	[M]
		EARTH TERMINAL	
E500	K4CZ01000027	TERMINAL	[M]
E501	K4CZ01000027	TERMINAL	[M]
		WIRES	
W1	REEX0403	PRI WIRE (BLUE)	[M]
W2	REEX0404	PRI WIRE (BROWN)	[M]
W500	REXX0425	15P WIRE	[M]
W601	REXX0434	10P WIRE	[M]
W602	REXX0435	8P WIRE	[M]
W603	REXX0435	8P WIRE	[M]
		RESISTORS	
R401	ERDS2TJ224T	220K 1/4W	[M]
R402	ERDS2TJ102T	1K 1/4W	[M]
R501	ERDS2TJ472T	4.7K 1/4W	[M]
R502	ERDS2TJ472T	4.7K 1/4W	[M]

100%	100%	100%	100%
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Ref. No.	Part No.	Part Name & Description	Remarks
R505	ERDS2TJ153T	15K 1/4W	[M]
R506	ERDS2TJ153T	15K 1/4W	[M]
R509	ERDS2TJ472T	4.7K 1/4W	[M]
R510	ERDS2TJ472T	4.7K 1/4W	[M]
R511	ERDS2TJ153T	15K 1/4W	[M]
R512	ERDS2TJ153T	15K 1/4W	[M]
R513	ERDS2TJ563T	56K 1/4W	[M]
R514	ERDS2TJ563T	56K 1/4W	[M]
R515	ERDS2TJ563T	56K 1/4W	[M]
R516	ERDS2TJ563T	56K 1/4W	[M]
R519	ERDS2TJ824T	820K 1/4W	[M]
R520	ERDS2TJ223T	22K 1/4W	[M]
R521	ERDS2TJ563T	56K 1/4W	[M]
R522	ERDS2TJ563T	56K 1/4W	[M]
R523	ERDS2TJ124T	120K 1/4W	[M]
R524	ERDS2TJ124T	120K 1/4W	[M]
R525	ERDS2TJ154T	150K 1/4W	[M]
R526	ERDS2TJ124T	120K 1/4W	[M]
R529	ERDS2TJ223T	22K 1/4W	[M]
R530	ERD25FVJ1R0T	1 1/4W	[M]
R531	ERD25FVJ1R0T	1 1/4W	[M]
R532	ERDS2TJ472T	4.7K 1/4W	[M]
R533	ERDS1FVJ100T	10 1/2W	[M]
R534	ERDS1FVJ100T	10 1/2W	[M]
R537	ERDS1FVJ100T	10 1/2W	[M]
R538	ERDS1FVJ100T	10 1/2W	[M]
R545	ERDS2TJ224T	220K 1/4W	[M]
R546	ERDS2TJ102T	1K 1/4W	[M]
R547	ERDS2TJ394T	390K 1/4W	[M]
R548	ERDS2TJ334T	330K 1/4W	[M]
R549	ERDS2TJ392T	3.9K 1/4W	[M]
R550	ERDS2TJ103T	10K 1/4W	[M]
R551	ERDS2TJ103T	10K 1/4W	[M]
R558	ERDS2TJ104T	100K 1/4W	[M]
R559	ERDS2TJ103T	10K 1/4W	[M]
R560	ERDS2TJ151T	150 1/4W	[M]
R561	ERDS1FVJ392T	3.9K 1/2W	[M]
R562	ERDS2TJ472T	4.7K 1/4W	[M]
R563	ERDS1FVJ102T	1K 1/2W	[M]
R564	ERDS2TJ224T	220K 1/4W	[M]
R565	ERDS1FVJ392T	3.9K 1/2W	[M]
R567	ERDS1FVJ152T	1.5K 1/2W	[M]
R568	ERDS2TJ151T	150 1/4W	[M]
R569	ERDS1FVJ152T	1.5K 1/2W	[M]
R570	ERDS2TJ103T	10K 1/4W	[M]
R571	ERDS1FVJ222T	2.2K 1/2W	[M]
R577	ERDS2TJ152T	1.5K 1/4W	[M]
R578	ERDS2TJ103T	10K 1/4W	[M]
R579	ERDS2TJ332T	3.3K 1/4W	[M]
R580	ERDS2TJ220T	22 1/4W	[M]
R581	ERDS2TJ682T	6.8K 1/4W	[M]
R582	ERDS2TJ224T	220K 1/4W	[M]
R583	ERDS2TJ101T	100 1/4W	[M]
R584	ERDS2TJ473T	47K 1/4W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R587	ERDS2TJ272T	2.7K 1/4W	[M]
R588	ERDS2TJ151T	150 1/4W	[M]
R589	ERDS2TJ103T	10K 1/4W	[M]
R590	ERDS2TJ102T	1K 1/4W	[M]
R600	ERDS2TJ473T	47K 1/4W	[M]
R601	ERDS2TJ473T	47K 1/4W	[M]
R602	ERDS2TJ472T	4.7K 1/4W	[M]
R603	ERDS2TJ103T	10K 1/4W	[M]
R604	ERDS2TJ225T	2.2M 1/4W	[M]
R606	ERG2SJ220E	22 2W	[M]
R609	ERDS1FVJ152T	1.5K 1/2W	[M]
R610	ERD2FCVJ4R7T	4.7 1/4W	[M]
R611	ERD2FCVJ4R7T	4.7 1/4W	[M]
R611	ERDS2TJ103T	10K 1/4W	[M]
R612	ERD2FCVJ4R7T	4.7 1/4W	[M]
R613	ERDS2TJ272T	2.7K 1/4W	[M]
R614	ERDS2TJ272T	2.7K 1/4W	[M]
R615	ERDS2TJ473T	47K 1/4W	[M]
R616	ERDS2TJ472T	4.7K 1/4W	[M]
R617	ERDS2TJ822T	8.2K 1/4W	[M]
R618	ERDS2TJ473T	47K 1/4W	[M]
R619	ERDS2TJ563T	56K 1/4W	[M]
R620	ERDS2TJ563T	56K 1/4W	[M]
R621	ERDS2TJ100T	10 1/4W	[M]
R621	ERDS2TJ273T	27K 1/4W	[M]
R622	ERDS2TJ100T	10 1/4W	[M]
R622	ERDS2TJ103T	10K 1/4W	[M]
R623	ERDS2TJ392T	3.9K 1/4W	[M]
R624	ERDS2TJ392T	3.9K 1/4W	[M]
R625	ERDS2TJ100T	10 1/4W	[M]
R625	ERDS2TJ153T	15K 1/4W	[M]
R626	ERDS2TJ103T	10K 1/4W	[M]
R626	ERDS2TJ153T	15K 1/4W	[M]
R627	ERDS2TJ103T	10K 1/4W	[M]
R627	ERDS2TJ124T	120K 1/4W	[M]
R628	ERDS2TJ154T	150K 1/4W	[M]
R629	ERDS2TJ100T	10 1/4W	[M]
R630	ERDS2TJ100T	10 1/4W	[M]
R631	ERDS1FVJ100T	10 1/2W	[M]
R632	ERDS1FVJ100T	10 1/2W	[M]
R633	ERDS2TJ824T	820K 1/4W	[M]
R634	ERDS2TJ473T	47K 1/4W	[M]
R635	ERDS2TJ473T	47K 1/4W	[M]
		CAPACITORS	
C503	ECBT1H102KB5	1000P 50V	[M]
C504	ECBT1H102KB5	1000P 50V	[M]
C505	ECBT1H102KB5	1000P 50V	[M]
C506	ECBT1H102KB5	1000P 50V	[M]
C507	ECBT1H180JC5	18P 50V	[M]
C508	ECBT1H180JC5	18P 50V	[M]
C509	ECBT1H220JC5	22P 50V	[M]
C510	ECBT1H220JC5	22P 50V	[M]

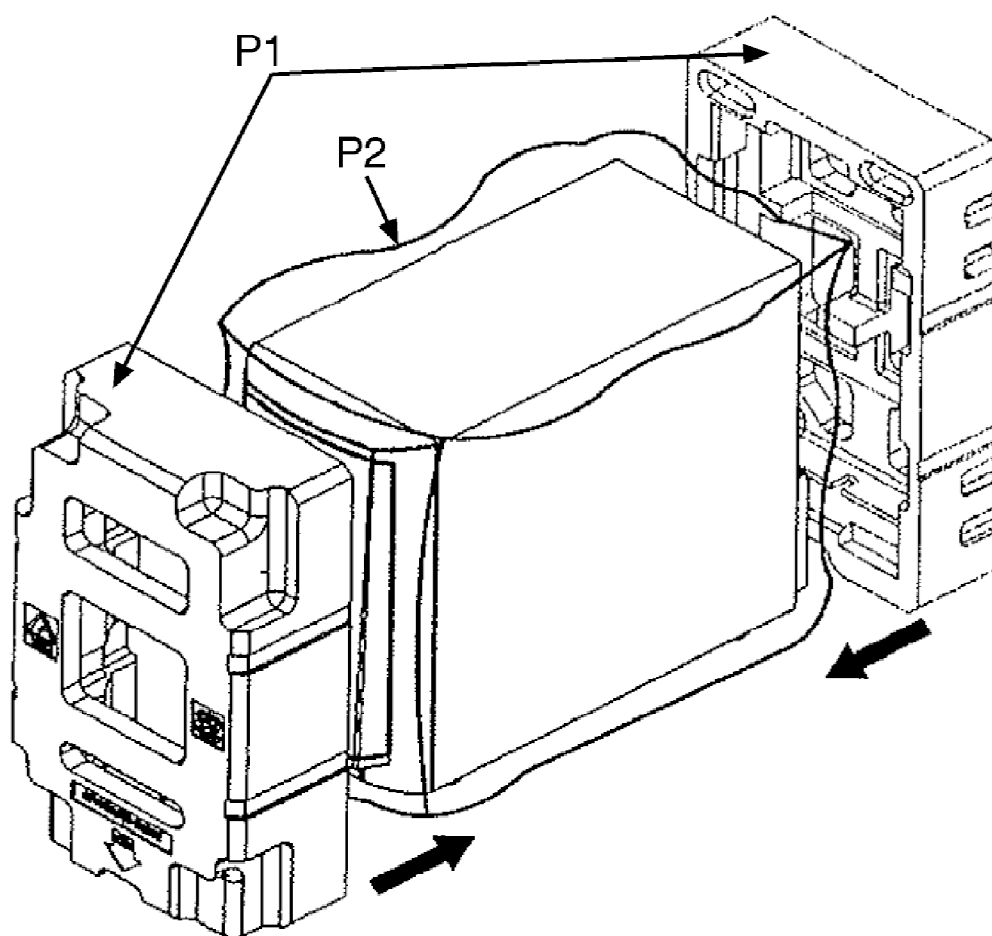
Ref. No.	Part No.	Part Name & Description	Remarks
C513	F1D1H473A012	0.047 50V	[M]
C514	ECEA0JKA101B	100 6.3V	[M]
C515	F1B2H103A060	0.01 500V	[M]
C516	F1B2H103A060	0.01 500V	[M]
C517	ECBT1C103NS5	0.01 16V	[M]
C518	F1D1H473A012	0.047 50V	[M]
C519	F1D1H473A012	0.047 50V	[M]
C522	F1D1H473A012	0.047 50V	[M]
C523	F1D1H473A012	0.047 50V	[M]
C526	F1D1H1040002	0.1 50V	[M]
C527	F1D1H1040002	0.1 50V	[M]
C528	F1D1H473A012	0.047 50V	[M]
C529	F1D1H1040002	0.1 50V	[M]
C530	ECBT1H102KB5	1000P 50V	[M]
C531	ECBT1H102KB5	1000P 50V	[M]
C532	ECBT1H102KB5	1000P 50V	[M]
C533	ECBT1H102KB5	1000P 50V	[M]
C534	ECA1HM330B	33 50V	[M]
C543	ECBT1H102KB5	1000P 50V	[M]
C544	ECA1HM101B	100 50V	[M]
C545	F1D1H1040002	0.1 50V	[M]
C546	ECA1SM332C5	3300 100V	[M]
C547	ECA1SM472C5	4700 100V	[M]
C548	ECA1SM472C5	4700 100V	[M]
C549	ECA1SM332C5	3300 100V	[M]
C550	ECBT1C103NS5	0.01 16V	[M]
C551	ECBT1H103KB5	0.01 50V	[M]
C553	ECQE2104KF3	0.1 250V	[M]
C554	ECQE1104KF3	0.1 100V	[M]
C555	ECEA1VKA4R7B	4.7 35V	[M]
C556	ECBT1H103KB5	0.01 50V	[M]
C557	ECEA1CKA220B	22 16V	[M]
C558	ECA1CM102B	1000 16V	[M]
C559	ECBT1H103KB5	0.01 50V	[M]
C560	ECA1HM100B	10 50V	[M]
C569	F1D1H473A012	0.047 50V	[M]
C570	ECA1EM331B	330 25V	[M]
C572	ECA1HM101B	100 50V	[M]
C573	ECBT1H102KB5	1000P 50V	[M]
C574	ECBT1H103KB5	0.01 50V	[M]
C575	ECBT1H103KB5	0.01 50V	[M]
C576	F2J1H100A048	10P 50V	[M]
C577	ECEA1CKA100B	10 16V	[M]
C578	ECBT1H103KB5	0.01 50V	[M]
C579	ECBT1H103KB5	0.01 50V	[M]
C580	ECEA1HKA2R2B	2.2 50V	[M]
C601	ECA1SM332C5	3300 100V	[M]
C602	ECA1SM472C5	4700 100V	[M]
C603	ECA1SM472C5	4700 100V	[M]
C604	ECA1SM332C5	3300 100V	[M]
C605	ECQE1104KF3	0.1 100V	[M]
C606	ECQE1104KF3	0.1 100V	[M]
C607	ECBT1H180JC5	18P 50V	[M]
C608	ECBT1H180JC5	18P 50V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C609	F1B2H103A060	0.01 500V	[M]
C610	F1B2H103A060	0.01 500V	[M]
C611	ECBT1H102KB5	1000P 50V	[M]
C612	ECBT1H102KB5	1000P 50V	[M]
C613	ECKR1H103ZF5	0.01 50V	[M]
C614	ECKR1H103ZF5	0.01 50V	[M]
C615	F1D1H473A012	0.047 50V	[M]
C616	F1D1H473A012	0.047 50V	[M]
C617	ECBT1H103KB5	0.01 50V	[M]
C618	ECBT1H103KB5	0.01 50V	[M]
C619	F1D1H473A012	0.047 50V	[M]
C620	F1D1H1040002	0.1 50V	[M]
C621	F1D1H1040002	0.1 50V	[M]
C647	ECA0JM471B	470 6.3V	[M]
C648	F1D1H1040002	0.1 50V	[M]

15.3. Packing Materials & Accessories Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS	
P1	RPNX0308	POLYFOAM	[M]
P2	RPFx0114	MIRAMAT BAG	[M]

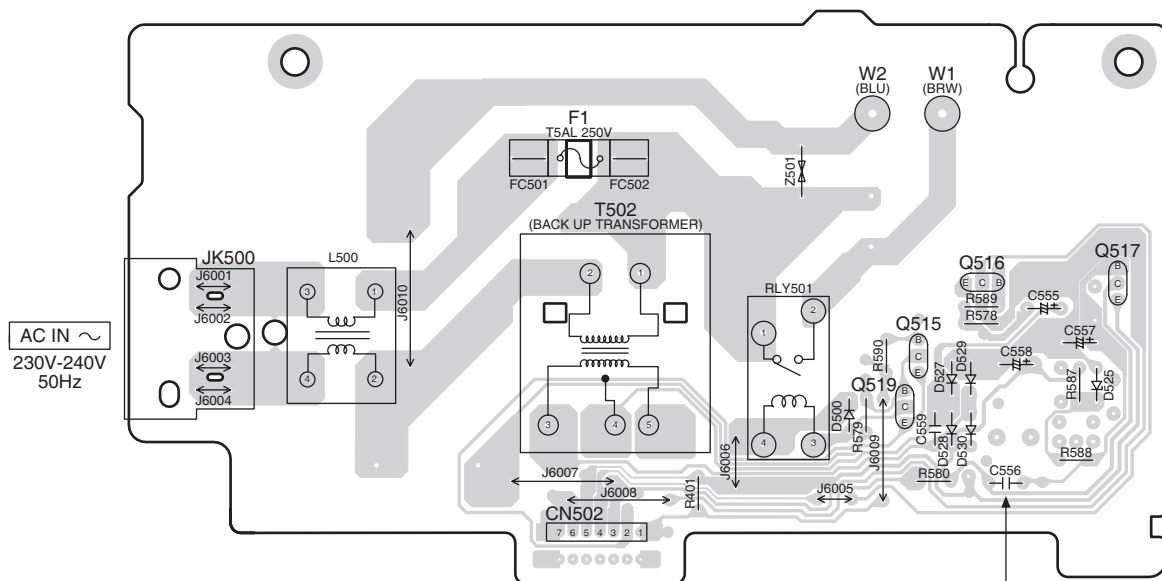
15.4. Packaging



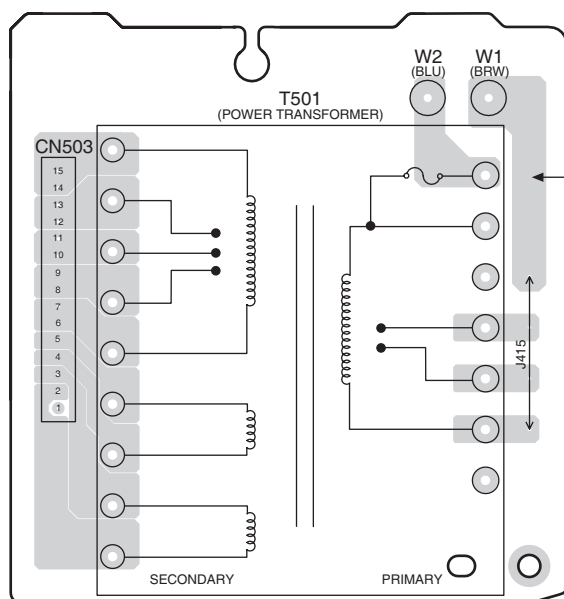
FLE0501/A/S/E/N/J

A B C D E F G

B AC INLET P.C.B (REPX0471D)



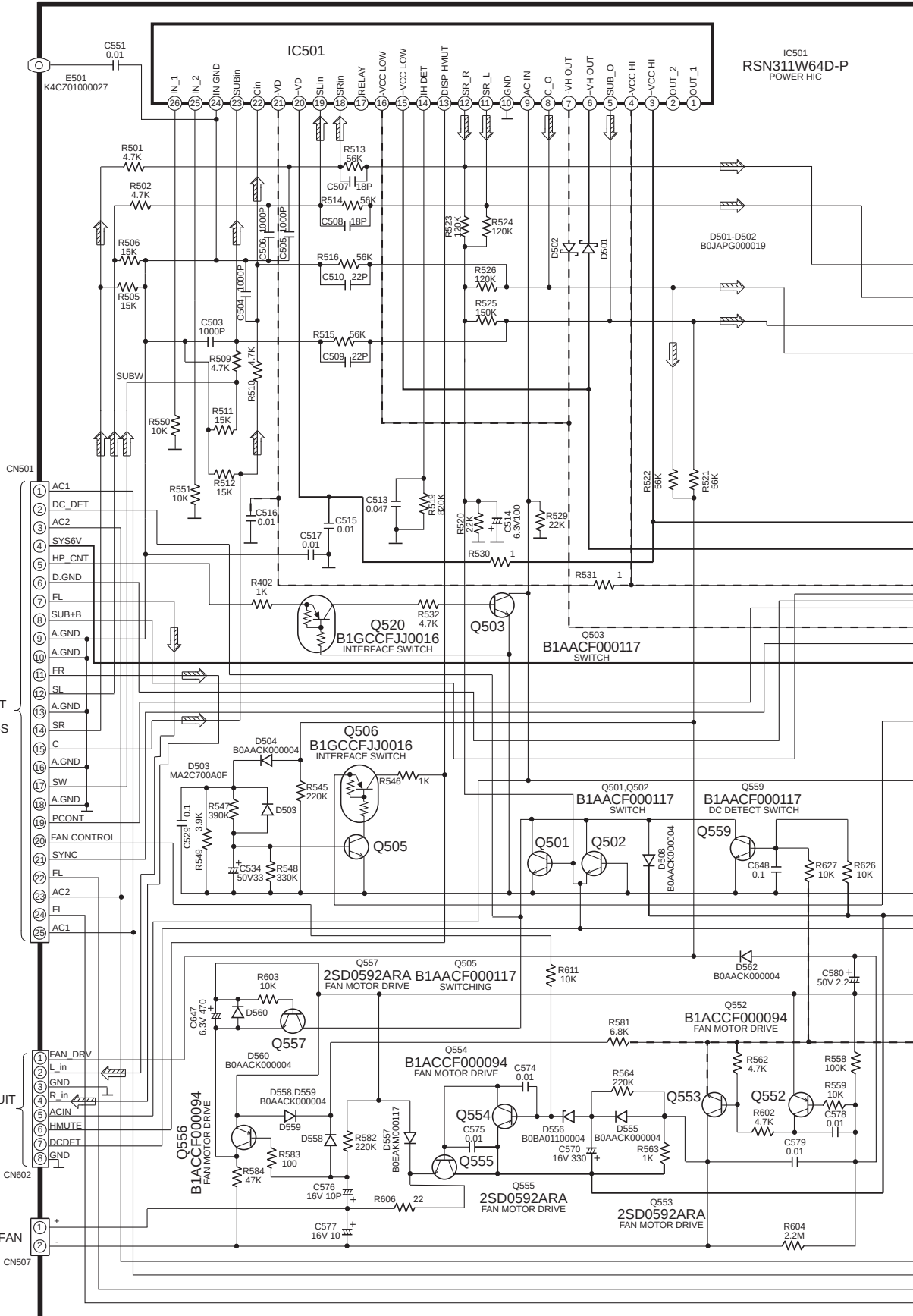
C TRANSFORMER P.C.B (REPX0471D)



CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE.
PLEASE DO NOT TOUCH THIS P.C.B

A

- - - : -B SIGNAL LINE
 ——— : +B SIGNAL LINE

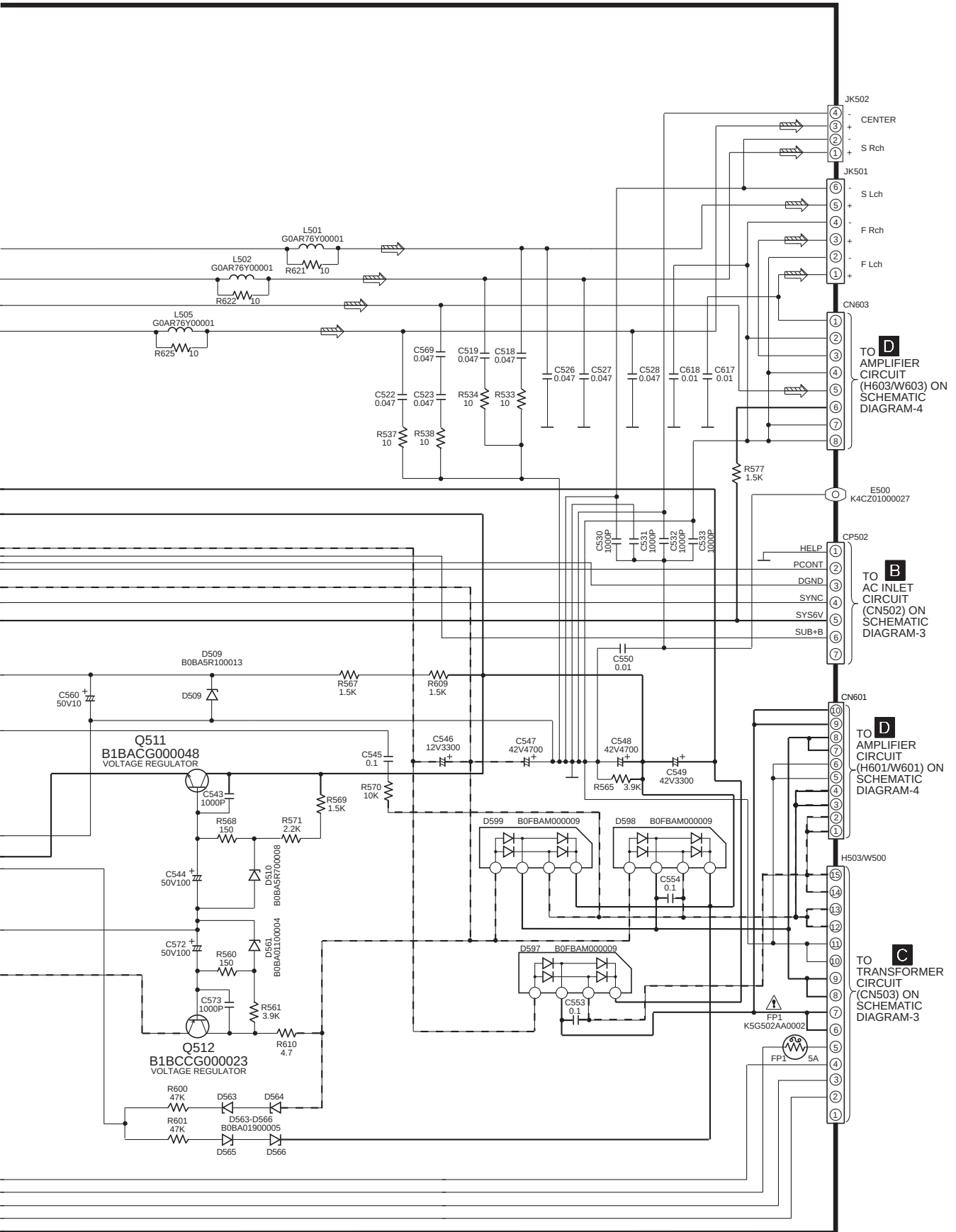
 : MAIN SIGNAL LINE

SCHEMATIC DIAGRAM-2

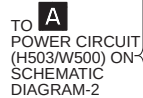
A POWER CIRCUIT

--- : -B SIGNAL LINE

⇒ : MAIN SIGNAL LINE



- - - : -B SIGNAL LINE
 ——— : +B SIGNAL LINE

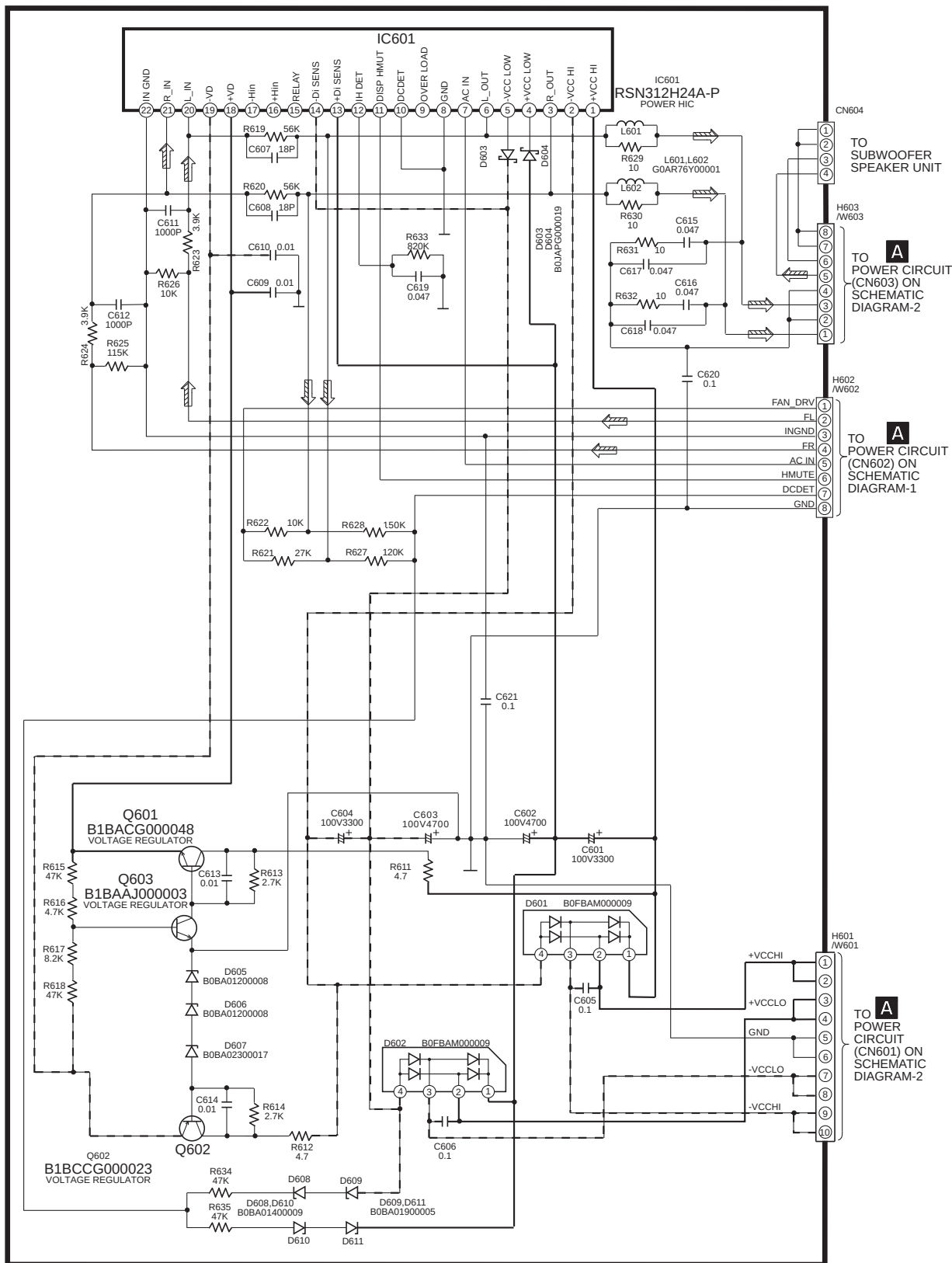


SCHEMATIC DIAGRAM-4

D

AMPLIFIER CIRCUIT

--- : -B SIGNAL LINE
 --- : +B SIGNAL LINE
 ⇨ : MAIN SIGNAL LINE



AC INLET P.C.B.

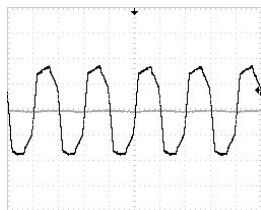
Ref No. MODE	Q515				Q516				Q517				Q519						
	E	C	B		E	C	B		E	C	B		E	C	B				
CD PLAY	0	0.1	0.8		0	3.5	-0.2		6.0	11.9	6.6		0	0.8	0				
STANDBY	0	6.0	0		0	3.6	-0.3		6.0	11.5	6.6		0	0	0				

POWER P.C.B.

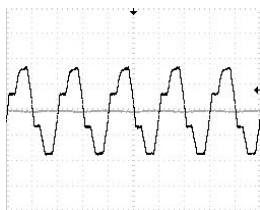
Ref No. MODE	IC501																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	31.0	31.0	64.5	-64.4	0	31.9	-31.9	0	0	0	0	0	0	-0.2	32.2	-32.1	-10.4	0	0	64.5
STANDBY	0	0	14.0	0.4	0	-0.2	-0.1	0	0	0	0	0	0	0	-0.2	-0.1	0	0	0	14.0
Ref No. MODE	IC501																			
	21	22	23	24	25	26														
CD PLAY	-64.4	0	0	0	0	0														
STANDBY	0.4	0	0	0	0	0														
Ref No. MODE	Q501				Q502			Q503			Q505			Q506						
	E	C	B		E	C	B	1	2	3	E	C	B	E	C	B				
CD PLAY	0	5.1	0		0	5.1	0	0	0	-0.6	0	0.8	0	0.8	0	0.8				
STANDBY	0	0.8	0		0	0.8	0	0	0	0	0	-0.2	0	-0.2	0	-0.2				
Ref No. MODE	Q511				Q512			Q520			Q552			Q553						
	E	C	B		E	C	B	E	C	B	E	C	B	E	C	B				
CD PLAY	5.3	32.1	5.8		-11.3	-32.2	-11.9	0	-0.6	0	0	-11.3	0.2	-11.3	5.2	-11.3				
STANDBY	0.4	-0.2	-0.2		0.4	0.1	0	0	0	0	0	0.3	0	0.4	0.4	0.4				
Ref No. MODE	Q554				Q555			Q556			Q557									
	E	C	B		E	C	B	E	C	B	E	C	B							
CD PLAY	5.3	-	4.8		4.9	5.3	-	0	0.3	-0.2	0.3	5.1	0							
STANDBY	0.4	0	0.1		2.5	0.4	0	0	0.3	0	0.3	0.8	0							

AMPLIFIER P.C.B.

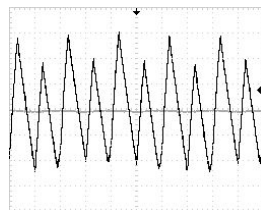
Ref No. MODE	IC601																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	64.5	-64.3	0	32.0	-31.9	0	0	0	-12.2	0	0	-0.2	32.2	-32.1	-10.1	0	0	49.0	-50.2	0
STANDBY	1.0	-0.5	0	1.3	-0.8	0	0	0	0.2	0	0	0	1.3	-0.8	0	0	0	0.5	0	0
Ref No. MODE	IC601																			
	21	22																		
CD PLAY	0	0																		
STANDBY	0	0																		
Ref No. MODE	Q601				Q602			Q603												
	E	C	B		E	C	B	1	2	3										
CD PLAY	48.9	64.5	49.5		-50.1	-64.4	-50.7	0	49.5	0.6										
STANDBY	0.8	1.2	1.2		-0.2	-0.6	-0.6	0	1.2	0.3										



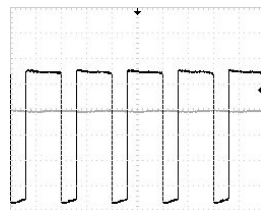
CN501 PIN 1
CD PLAY
17.6Vp-p (10msec.div)



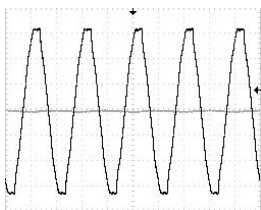
CN501 PIN 3
CD PLAY
17.4Vp-p (10msec.div)



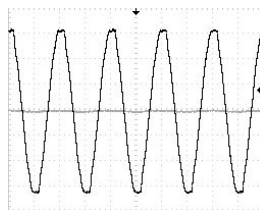
CN501 PIN 8
CD PLAY
1.10Vp-p (10msec.div)



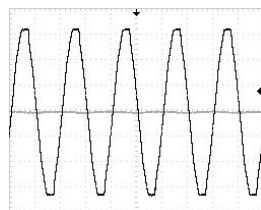
CN501 PIN 21
CD PLAY
5.24Vp-p (10msec.div)



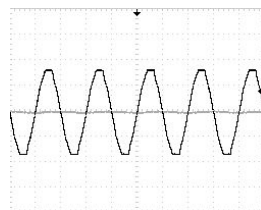
CN501 PIN 22
CD PLAY
6.52Vp-p (10msec.div)



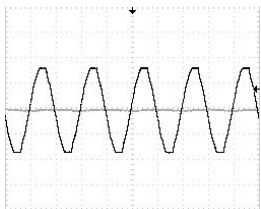
CN501 PIN 24
CD PLAY
6.44Vp-p (10msec.div)



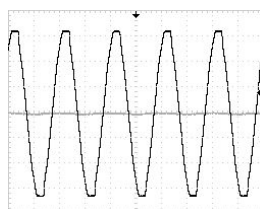
CN503 PIN 1
CD PLAY
131Vp-p (10msec.div)



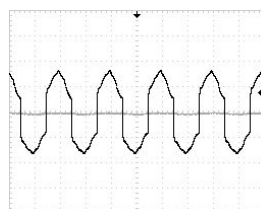
CN503 PIN 3
CD PLAY
66.4Vp-p (10msec.div)



CN503 PIN 7
CD PLAY
67.2Vp-p (10msec.div)

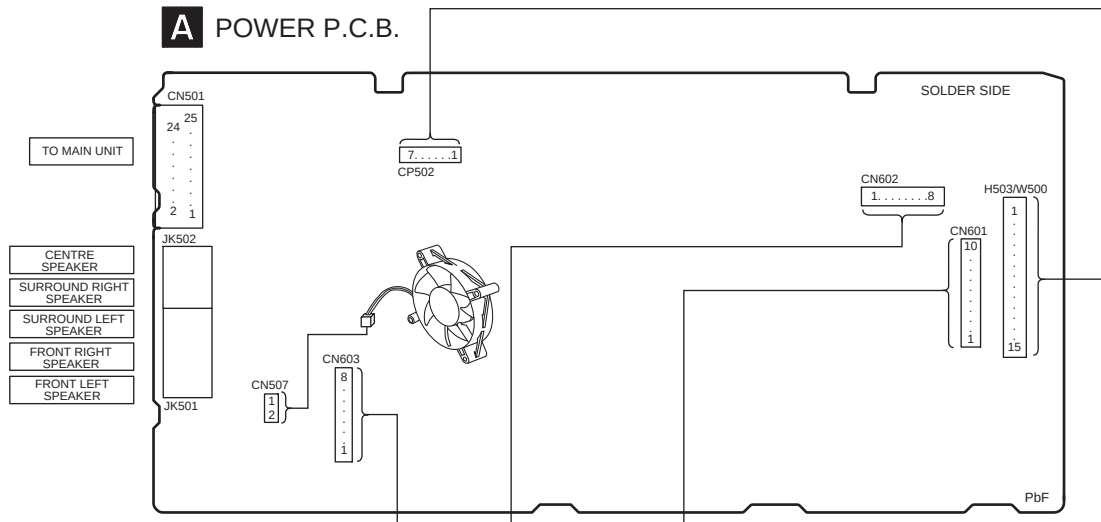


CN503 PIN 9
CD PLAY
130Vp-p (10msec.div)

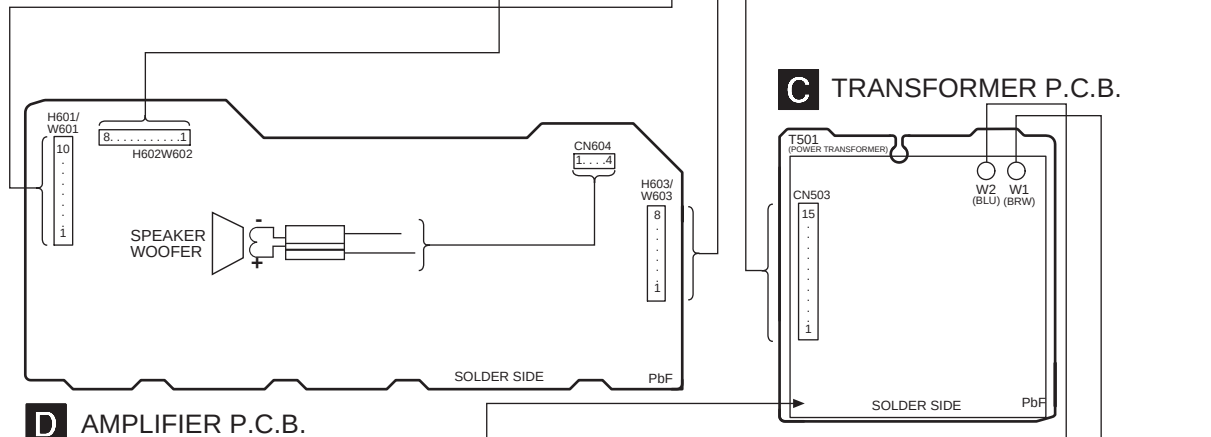


CN602 PIN 5
CD PLAY
3.28Vp-p (10msec.div)

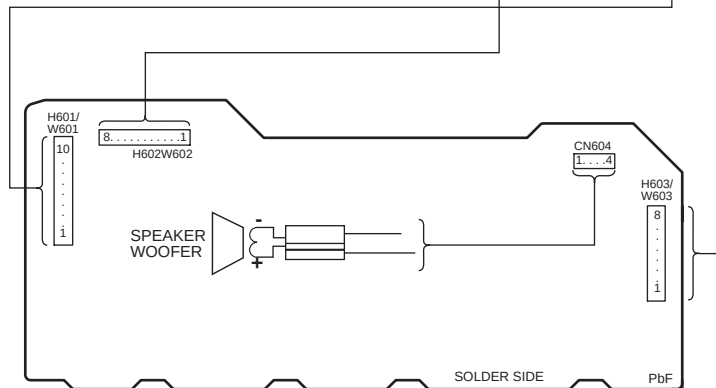
A POWER P.C.B.



C TRANSFORMER P.C.B.



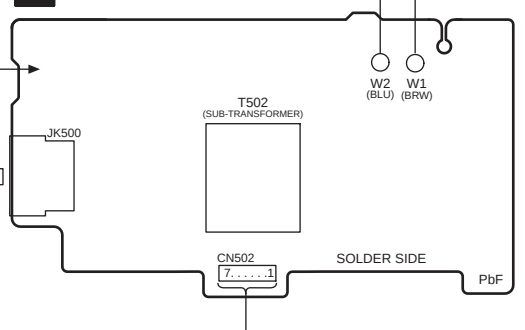
D AMPLIFIER P.C.B.



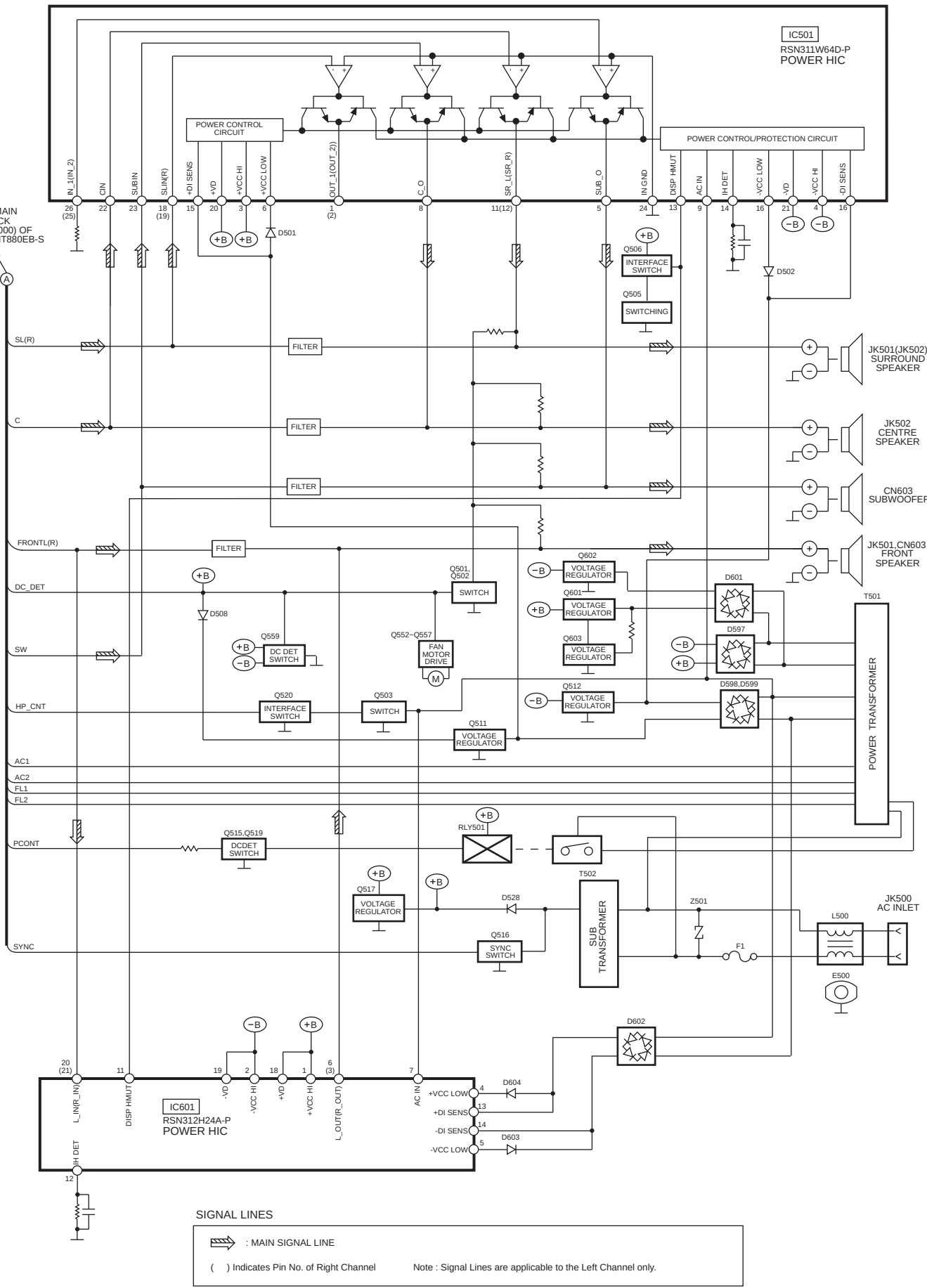
B AC INLET P.C.B.

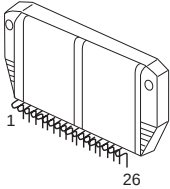
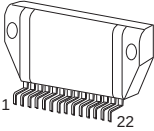
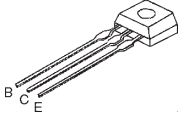
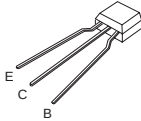
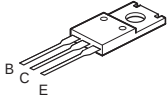
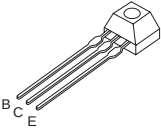
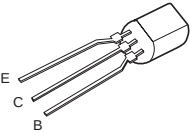
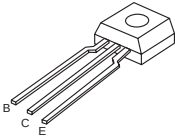
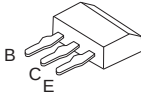
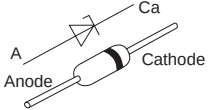
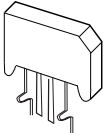
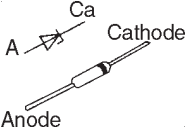
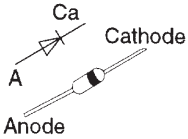
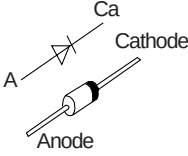
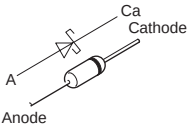
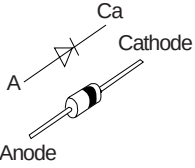
CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE.
PLEASE DO NOT TOUCH THIS P.C.B.

AC IN ~
230-240V
50Hz



TO MAIN
BLOCK
(JK2000) OF
SA-HT880EB-S



RSN311W64D-P  Diagram of a 26-pin component with pins numbered 1 to 26.	RSN312H24A-P  Diagram of a 22-pin component with pins numbered 1 to 22.	B1AACF000117  Diagram of a 3-pin component with pins labeled B, C, and E.	B1GCCFJJ0016  Diagram of a 3-pin component with pins labeled E, C, and B.	B1BACG000048 B1BCCG000023  Diagram of a 3-pin component with pins labeled B, C, and E.
B1GACFJJ0018  Diagram of a 3-pin component with pins labeled B, C, and E.	2SD0592ARA  Diagram of a 3-pin component with pins labeled E, C, and B.	B1ACCF000094  Diagram of a 3-pin component with pins labeled B, C, and E.	B1BAAJ000003  Diagram of a 3-pin component with pins labeled B, C, and E.	B0BA5R100013 B0BA01200008 B0BA6R600008 B0BA02300017  Diagram of a component with pins labeled A, Ca, and Cathode.
B0FBAM000009  Diagram of a component with pins.	B0BA01900005 B0BA01100004 B0BA01400009 B0BA5R700008  Diagram of a component with pins labeled A, Ca, and Cathode.	B0AACK000004  Diagram of a component with pins labeled A, Ca, and Cathode.	B0JAPG000019 B0EAKM000117  Diagram of a component with pins labeled A, Ca, and Cathode.	MA2C700A0F  Diagram of a component with pins labeled A, Ca, and Cathode.
B0EAKM000122  Diagram of a component with pins labeled A, Ca, and Cathode.				

A B C D E F G

A POWER P.C.B (REPX0471D)

TO MAIN UNIT

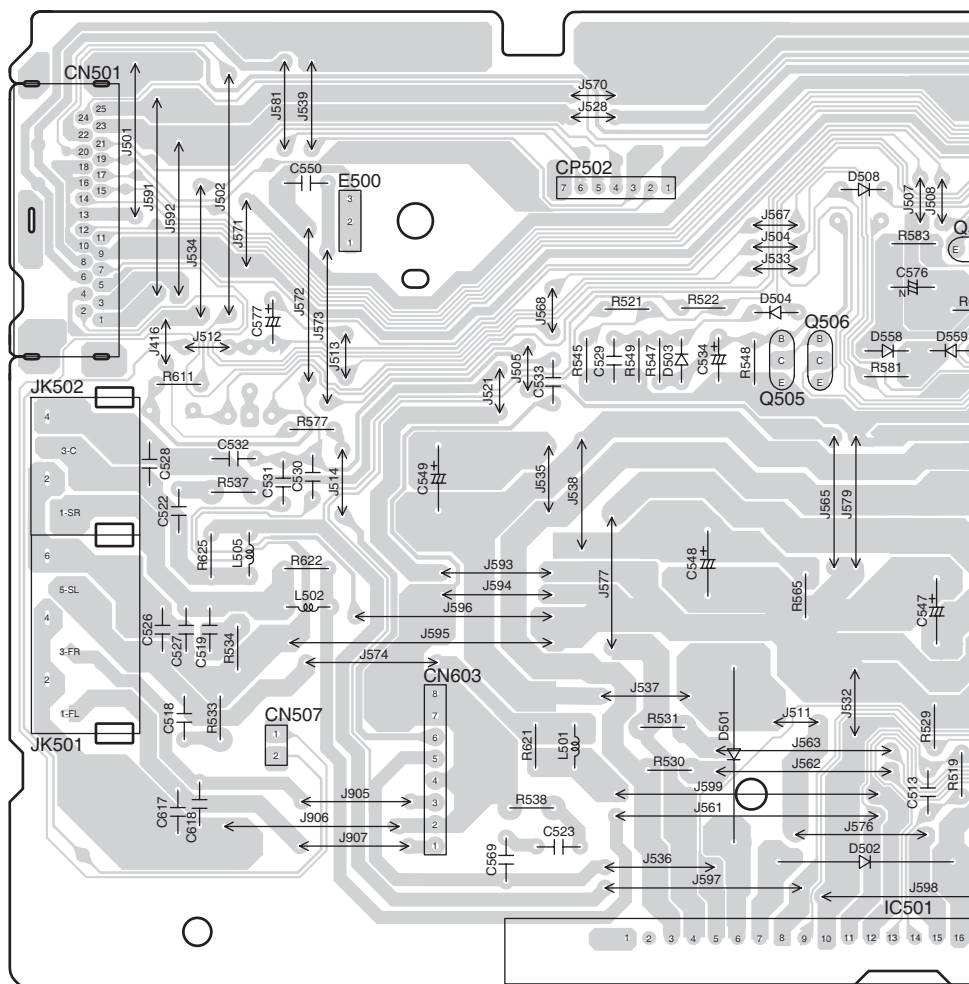
CENTRE
SPEAKER

SURROUND RIGHT
SPEAKER

SURROUND LEFT
SPEAKER

FRONT RIGHT
SPEAKER

FRONT LEFT
SPEAKER



G

H

I

J

K

L

M

